

PROCESS AND DEVICE FOR ESTIMATING THE SUCCESSIVE VALUES
OF DIGITAL SYMBOLS, IN PARTICULAR FOR THE EQUALIZATION
OF AN INFORMATION TRANSMISSION CHANNEL IN MOBILE
TELEPHONY

Abstract of the Disclosure

The successive values of the digital symbols which can each take M different possible values are estimated on the basis of the successive values of digital samples each of which results from the combination of at most L successive symbols. This estimation includes a stage by stage progression through a trellis of the Viterbi type with M^k states, with k being less than or equal to L-1. All the states of all the stages are respectively provided with aggregate metrics. When taking into account the sample of rank n, all the transitions arriving at the various states of the current stage of the trellis are partitioned into M groups, each group containing all the transitions arising from the states of the preceding stage which are associated with one of the M possible values of the symbol of rank n-k. The various aggregate metrics are calculated for these various states of the current stage of the trellis. One of the transitions which leads to the state provided with a extremum aggregate metric is determined in each group. A unique decision is taken regarding the value of the symbol of rank n-k by detecting the group associated with the extremum of these M extremum aggregate metrics. This unique decision is provided with a symbol-confidence index formulated from these M extremum aggregate metrics.